Amendments to the Specification:

Please amend the specification as follows:

[0007] Accordingly, the present invention features an EAM that includes a semiconductor layer having an electrically controllable light absorption. In one embodiment, the semiconductor layer is a multi-quantum well layer. In another embodiment, the semiconductor layer is a bulk semiconductor layer. The material composition of the semiconductor layer is chosen so that the semiconductor layer is substantially transparent to light propagating through the semiconductor layer when a substantially zero or a reverse bias voltage is applied across the semiconductor layer at operating temperatures of the electro-absorption modulator that are substantially greater than 25 degrees Celsius. The material composition of the semiconductor layer may be chosen to modulate light that is substantially 1310nm or that is substantially 1550nm.

[0008] In another embodiment, the material composition is chosen so that the semiconductor layer is substantially transparent to light propagating through the semiconductor layer when a substantially zero or a reverse bias voltage is applied across the semiconductor layer at operating temperatures of the electro-absorption modulator that are substantially greater than 35 degrees Celsius. In another embodiment, the material composition is chosen so that the semiconductor layer is substantially transparent to light propagating through the semiconductor layer when a substantially zero or a reverse bias voltage is applied across the semiconductor layer at operating temperatures of the electro-absorption modulator that are substantially greater than 45 degrees Celsius.

[0009] In yet another embodiment, the material composition is chosen so that the semiconductor layer is substantially transparent to light propagating through the semiconductor layer when a substantially zero or a reverse bias voltage is applied across the semiconductor layer at the maximum operating temperature of the electro-absorption modulator.

[0016] The electro-absorption modulator includes a semiconductor layer having an electrically controllable absorption. The semiconductor layer may be a multi-quantum well layer or a bulk semiconductor layer. The material composition of the semiconductor layer is chosen so that the semiconductor layer is substantially transparent to light propagating through the

semiconductor layer when a substantially zero or a reverse bias voltage is applied across the semiconductor layer at operating temperatures of the electro-absorption modulator that are substantially greater than 25 degrees Celsius. The material composition of the semiconductor layer may be chosen to modulate light that is substantially 1310 nm or that is substantially 1550 nm.

[0017] In one embodiment, the material composition of the electro-absorption modulator is chosen so that the semiconductor layer is substantially transparent to light propagating through the semiconductor layer when a substantially zero or a reverse bias voltage is applied across the semiconductor layer at the maximum operating temperature of the electro-absorption modulator.

[0019] The transmitter includes a laser that generates light at an output. The transmitter also includes an electro-absorption modulator with a semiconductor layer having an electrically controllable absorption. The material composition of the semiconductor layer is chosen so that the semiconductor layer is substantially transparent to light propagating through the semiconductor layer when a substantially zero or a reverse bias voltage is applied across the semiconductor layer at operating temperatures of the electro-absorption modulator that are substantially greater than 25 degrees Celsius.

[0023] The present invention also features a method of generating data modulated light. The method includes generating light and then propagating the light through a semiconductor layer having an electrically controllable absorption. The semiconductor layer has a material composition that is chosen so that the semiconductor layer is substantially transparent to light propagating through the semiconductor layer when a substantially zero or a reverse bias voltage is applied across the semiconductor layer at operating temperatures of the electro-absorption modulator that are substantially greater than 25 degrees Celsius.

[0026] The present invention also features a method of tracking a temperature of an electro-absorption modulator to a temperature of a semiconductor laser. The method includes generating light with a semiconductor laser. The light is propagated through an electro-absorption modulator comprising a semiconductor layer having an electrically controllable absorption. The semiconductor layer has a material composition that is chosen so that the semiconductor layer is substantially transparent to light propagating through the semiconductor layer when a